

$$X = x_0 + at$$

$$Y = y_0 + bt$$



$$X = -3 + -1t$$

$$Y = -3 + -1t$$

Choose  $x_0$  &  $y_0$  from  $\{-3, -2, -1, 0, 1, 2, 3\}$

Choose  $a$  &  $b$  from  $\{-1, 0, 1\}$

Use window given

$$x_{min} = -9.4 \cdot 2$$

$$x_{max} = 9.4 \cdot 2$$

$$y_{min} = -6.2 \cdot 2$$

$$y_{max} = 6.2 \cdot 2$$

$$0 \leq t \leq 4$$

0.1 t-step

Concept: Parametric Equations

Sect. 6.1

 $x$  &  $y$  variables each written as a function of  $t$ Rule: (for linear parametrics) $x_0$  - horizontal shift (like you'd expect  $\begin{matrix} + & \rightarrow \\ - & \leftarrow \end{matrix}$ ) $y_0$  - vertical shift $a$  - sign reflects over  $y$ -axis, stretch horizontally $b$  - sign reflects over  $x$ -axis, stretch verticallyendpoints - start point (plug in  $t_{\min}$ )  
end point (plug in  $t_{\max}$ )slope -  $\frac{b}{a}$

$$x = t + 2$$

$$y = t^2$$

$$t = \underline{x - 2}$$

$$y = (x - 2)^2$$

$$\textcircled{1} \quad \begin{array}{l} x = 3t - 1 \\ y = 2t + 1 \end{array} \rightarrow \begin{array}{l} t = \frac{x+1}{3} \\ y = 2\left(\frac{x+1}{3}\right) + 1 \end{array}$$

$$\textcircled{2} \quad \begin{array}{l} x = t + 1 \\ y = t^2 \end{array} \quad \begin{array}{l} t = x - 1 \\ y = (x - 1)^2 \end{array}$$

$$\textcircled{3} \quad \begin{array}{l} x = t^2 \\ y = t + 3 \end{array} \quad \begin{array}{l} t = \pm \sqrt{x} \\ y = \pm \sqrt{x} + 3 \end{array}$$

HW: #1-7 omit #4    Sect- 6.2

friendly window

$$x_{\min} = -9.4$$

$$x_{\max} = 9.4$$

$$y_{\min} = -6.2$$

$$y_{\max} = 6.2$$